

College of Engineering and Computer Science

Chemical Engineering

Fall 2017

Name _____

SUID _____

pr= prerequisite, co=corequisite

Minor/Second Major (if any): _____

| | (CREDIT) | FIRST YEAR | | SOPHOMORE | | JUNIOR | | SENIOR | | |
|---|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | GRADE | F | S | F | S | F | S | F | S |
| MATHEMATICS (15) | | | | | | | | | | |
| MAT295 Calculus 1 | (4) _____ | 4 | | | | | | | | |
| MAT296 Calculus 2 (pr: MAT 295 min C-) | (4) _____ | | 4 | | | | | | | |
| MAT397 Calculus 3 (pr: MAT 296 min C-) | (4) _____ | | | 4 | | | | | | |
| MAT485 Diff. Eq. & Matrix Alg. (pr: MAT 397) | (3) _____ | | | | 3 | | | | | |
| SCIENCES (26) | | | | | | | | | | |
| CHE106 General Chemistry 1 | (3) _____ | 3 | | | | | | | | |
| CHE107 General Chemistry Lab 1 (co: CHE 106) | (1) _____ | 1 | | | | | | | | |
| CHE116 General Chemistry 2 (pr: CHE 106) | (3) _____ | | 3 | | | | | | | |
| CHE117 Gen. Chemistry Lab 2 (pr: CHE 107, co: CHE 116) | (1) _____ | | 1 | | | | | | | |
| CHE275 Organic Chemistry 1 (pr: CHE 116) | (3) _____ | | | 3 | | | | | | |
| CHE276 Org. Chemistry Lab 1 (pr: CHE 117, co: CHE 275) | (2) _____ | | | 2 | | | | | | |
| CHE346 Phys. Chem. 1 (pr: CHE 116, MAT 296 co: PHY 212) | (3) _____ | | | | | 3 | | | | |
| CHE347 Phys/An. Chem. Lab (pr: CHE 275/276, co: CHE 346) | (2) _____ | | | | | 2 | | | | |
| PHY211 General Physics 1 (co: PHY 221, MAT 295) | (3) _____ | | 3 | | | | | | | |
| PHY221 Gen. Physics Lab 1 (co: PHY 211) | (1) _____ | | 1 | | | | | | | |
| PHY212 Gen. Phys. 2 (pr: PHY 211,221, co: PHY 222, MAT 296) | (3) _____ | | | 3 | | | | | | |
| PHY222 General Physics Lab 2 (co: PHY 212) | (1) _____ | | | 1 | | | | | | |
| WRITING/SOCIAL SCIENCES/HUMANITIES (27) | | | | | | | | | | |
| WRT105 Studio 1: Practices of Academic Writing | (3) _____ | 3 | | | | | | | | |
| WRT205 Studio 2: Critical Research and Wrt (pr: WRT 105) | (3) _____ | | | | 3 | | | | | |
| WRT307 Adv. Wrt Studio: Prof. Wrt (pr: WRT 205) | (3) _____ | | | | | 3 | | | | |
| SSH Elective _____ | (3) _____ | 3 | | | | | | | | |
| SSH Elective _____ | (3) _____ | | | | 3 | | | | | |
| SSH Elective _____ | (3) _____ | | | | 3 | | | | | |
| SSH Elective _____ | (3) _____ | | | | | | | 3 | | |
| SSH Elective _____ | (3) _____ | | | | | | | 3 | | |
| SSH Elective _____ | (3) _____ | | | | | | | | | 3 |
| ENGINEERING (9) | | | | | | | | | | |
| ECS101 Intro. to Engr. & Comp. Sci. | (3) _____ | 3 | | | | | | | | |
| ECS104 Engr. Comput. Tools (co: MAT 295) | (3) _____ | | 3 | | | | | | | |
| ECS326 Engr. Materials, Prop. & Proc. | (3) _____ | | | | | 3 | | | | |
| CHEMICAL ENGINEERING (36) | | | | | | | | | | |
| CEN212 Exp. Methods in BMCE (pr: MAT 296, ECS 104) | (3) _____ | | | | 3 | | | | | |
| CEN231 Mass and Energy Balances | (3) _____ | | | 3 | | | | | | |
| CEN252 Chem. Engr. Thermodynamics 1 (pr: CEN 231) | (3) _____ | | | | 3 | | | | | |
| CEN311 Chemical Engineering Lab 1 (co: CEN 341) | (2) _____ | | | | | | 2 | | | |
| CEN333 Fluid Transport (pr: MAT 397, PHY 212) | (3) _____ | | | | | 3 | | | | |
| CEN341 Fund. Of Heat & Mass Transfer (pr: CEN 333) | (4) _____ | | | | | | 4 | | | |
| CEN353 Chem. Engr. Thermodynamics 2 (pr: CEN 252) | (3) _____ | | | | | 3 | | | | |
| CEN412 Chemical Engineering Lab 2 (pr: CEN 341) | (2) _____ | | | | | | | 2 | | |
| CEN542 Mass & Heat Transf. Operations (pr: CEN 341) | (3) _____ | | | | | | | 3 | | |
| CEN574 Process Design (pr: CEN 353, 587) | (4) _____ | | | | | | | | | 4 |
| CEN575 Process Control (pr: MAT 485) | (3) _____ | | | | | | 3 | | | |
| CEN587 Chemical Reaction Engineering (pr: CEN 341) | (3) _____ | | | | | | | 3 | | |
| TECHNICAL ELECTIVES (15) | | | | | | | | | | |
| Choose ONE of: CHE 356, CEN 451, CEN 551 | (3) _____ | | | | | | 3 | | | |
| Tech Elective _____ | (3) _____ | | | | | | 3 | | | |
| Tech Elective _____ | (3) _____ | | | | | | | 3 | | |
| Tech Elective _____ | (3) _____ | | | | | | | | 3 | |
| CEN Tech Elective _____ | (3) _____ | | | | | | | | | 3 |
| TOTAL CREDITS | | 128 | 17 | 15 | 16 | 18 | 17 | 15 | 17 | 13 |

*See reverse side for all notes

CHEMICAL ENGINEERING
Curriculum Notes
2017-2018

1. Chemical engineering students must complete a minimum of **15 credits of Technical Electives** from mathematics, natural sciences, and engineering courses not included in the required chemical engineering curriculum. All technical electives are subject to approval by the student's academic advisor and program director. Courses not included in the description above may be approved by petition if found to have sufficient technical content.
 - a. **3 credits of this requirement are restricted and must be chosen from:**
 - CHE 356 Physical Chemistry (pr: CHE 346), or
 - CEN 451 Molecular and Statistical Thermodynamics (pr: CEN 353), or
 - CEN 551 Biochemical Engineering (pr: CHE 275)
 - b. **At least one additional technical elective must be in chemical engineering.**

2. Chemical engineering students must complete a minimum of **18 credits Social Sciences, Humanities, and/or Foreign Language** using any one of the following options:
 - Option 1:** Complete a minimum of 18 credits from the Social Sciences List* and/or Humanities List* and/or of a foreign language†.
 - Option 2:** Petition to use completion of the Engineering and Computer Science Management minor to complete the Social Science and Humanities elective requirement.

*The Humanities List and Social Sciences List of approved courses are published by the College of Arts and Sciences in the Undergraduate Catalog for Advising (coursecatalog.syr.edu). Students should confirm that a course intended to fulfill this requirement is in one of these lists.

*Please note that the following courses are **NOT** social sciences or humanities: ANT 131, ANT 431, ANT 433, all CFS, GEO 155, GEO 215, GEO 316, GEO 326, GEO 482, GEO 455, HNR 250, HNR 255, HNR 350, HNR 355, HNR 450, HNR 455; PSY 223, PSY 252, PSY 323, PSY 324, PSY 334. This list is not exhaustive.

*Students may count *ECS 392- Ethical Aspects of ECS* towards their Social Science and Humanities elective requirements.

†Foreign language grammar and/or oral practice courses may not be in student's native language. Foreign language courses focused on literature, culture, or linguistics in a student's native language are acceptable.